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The Profitability Study into Fish Farms in 1983.

The regional differences increase.

* The return on the total capital in the fish breeding industry increased on an average from 19.8% in 1982 to 24.5% in 1983.

* Average earning power per man year on the farms went down from Kr. 206.955 in 1982 to Kr. 199.116 in 1983. Older established farms have, on the average, better earning power than farms under developmentt. The figures for the 1983 study included a larger number of farms under development than was the case in 1982. The figures for the 68 farms included in both years show an increase in average earning power from Kr.197.525 to Kr. 237.322.

* The 2nd largest group of farms from 7000 to 14.999 m^3 appears to provide the best average earning power. At the same time, it seems that there is a lesser relationship between the size of the farm and return on total capital than there is between the size of the farm and earning power per man year.

* The farms with the highest earning power per man year and rate of return on capital ~~was~~ were also in 1983 to be found in Sogn & Fjordane and Hordaland. The farms north of and including Møre and Romsdal, which had low earning power in 1982, further reduced this in 1983.

  (Caption:) It is farms between 7000 and 14.999 m^3 that have the best earning power.

These are some of the conclusions of the study by the Director of Fisheries into the profitability of fish farms in 1983. "FISKETS GANG" sets out below a summary of the results of the study, which is based on information drawn from accounts information of 116 farms out of a total of 362 of all sizes, which carried on production of edible fish and had sales in 1983.

Data Basis:

The results of the profitability study are based on financial accounts and other information from 116 farms out of a total of 362, which had both production and sale during 1983 of farm-bred salmon and trout. The selection is provisionally placed , with certain adjustments, within defined parameters (size of farms, geographic location). Farms with a production capacity under 500 m^3 are not included. In cases of farms which include both the production of stock fish and fish for consumption, an attempt has been made to eliminate income and costs related to the former. The profitability study for 1983, as for 1982, therefore only deals with the production of fish for consumption.

Results, country-wide:

Profitability. The table shows that the average earning power per man-year based on the total selection of farms fell from Kr. 206.955 in 1982 to Kr. 199.116 in 1983. The decrease does not mean that the breeding industry as such had a lower earning power in 1983 than in 1982. The decrease in the figures is related to the composition of the group data chosen for the profitability studies undertaken for the two years. The data selected for 1983 include more farms commencing operations in recent years than was the case for the 1982 study. These farms often have poorer earning power compared with more established farms. Average earning power per man-year for the 68 farms included as part of the data selected for both 1982 and 1983, increased from Kr.197.525 in 1982 to Kr.237.322 in 1983. Average earning power per man-year for the 48 new farms included in the 1983 study was Kr.144.991. Consequently, an immediate conclusion could be reached that the average earning power per man-year for the fish breeding industry as a whole was at least at the same high level in 1983 as in 1982.

The dispersion of the results was somewhat greater in 1983 than in 1982. 23 farms (9 in 1982) had a negative earning power in 1983. Many of the 23 farms with negative earning power in 1983 were farms which were not included in 1982, and which were under development in 1983. 32 farms in 1983 had an earning power per man-year from 0 to Kr.200.000 (55 in 1982), while the other 61 farms (40 in 1982) had an earning power per manyear higher than Kr.200.000. Compared with 1982, there was therefore a relatively higher number of farms in 1983 with especially low (negative) earning power per man-year and especially high earning power per man-year (over Kr.200.000).

The rate of return on capital invested in the operations increased from an average 19.8% in 1982 to an average of 24.5% in 1983. If the work performed for the enterprises by owners and their families without pay is considered as a cost factor, the rate of return on capital amounts to 17.1% as against 13.5% in 1982. The portion of production income (contribution) left over to allow for fixed costs, wages and profits, after deduction of variable costs, was about the same in 1982 and 1983 (43% and 44% respectively)

Sale/Production:

The value of direct sales of farm-bred salmon and trout increased by a whole 65% from 1982 to 1983. In the same time period, sales per farm included in the profitability study increased by 55%. The difference is related to the fact that a higher number of breeding farms delivered fish in 1983 than in 1982 (362 and 328 farms respectively). Most of the increase in the sale of farm-bred fish can nevertheless be accounted for by increased sales from those farms which already had such sales in 1982. This is also reflected by increased utilization of the concession capacity, which rose from 94% in 1982 to nearer 99% in 1983.

It is evident from the table that the production per man-year was practically unchanged from 1982 to 1983 (a good 26 tonn), while the production per utilized unit of volume (m^3) increased from 13.59 kg in 1982 to 16.09 kg in 1983.

Costs:

All larger costs itemized in the 1982 study increased considerably from 1982 to 1983. Feed costs, which were not itemized in the 1982 study, amounted to an average of Kr.1000.000 per farm in 1983 (43% of the total costs, 64% of the variable

costs. Wages are not included)

Results according to farm size:

The profitability study for 1983 shows that the earning power per man year-increased as the size of the farm increased, up to and including the 2nd largest group of farms (7.000 - 14.999 m^3). The largest farms, that is to say those with utilized capacity over 15.000 m^3, on the other hand had the lowest average earning power per man-year in 1983, taking into account all size groups.

The main conclusion was the same in 1982 as well, but there was a somewhat smaller difference in average earning power per man-year between the individual group sizes in 1983 than in 1982.

The data for the group of farms with a capacity of 15.000 m^3 and over were limited in 1983 to only 5 farms out of a total 11 existing farms in this size group. This, together with good earning power for 2 of the 3 farms with a production volume of 10 - 14,999 m^3 included in the profitability study, to some extent weakens the main conclusion. One therefore has to be cautious in drawing firm conclusions, but the material does not suggest that there are any evident advantages inherent in large scale operations in excess of 8.000 - 12000 m^3. Even if several of them had very good earning power, none of the 5 farms over 15.000 m^3 included as part of the data was among the 30 farms with the highest earning power per man-year in 1983. 6 of the 12 best farms in view of earning power per man-year, had a production capacity between 8.000 m^3 and 12.000 m^3, while 4 others of the 12 farms had a production capacity of 5.000 m^3 or less.

Also, when it comes to Rate of Return on Capital II (see the attached table), it was the farms between 7.000 and 15.000 m^3 that had the highest average results. There doesn't appear to be any connection between high rate of return on capital and the size of the farms, based on the data at hand. Large variations are concealed behind the low average rate of return on capital for farms over 15.000 m^3.

In 1983, as in 1982, there was a clear relationship between the size of the farms and work carried out without pay. This is apparent from a comparison between Rate of Return on Capital I and II. Not entirely unexpectedly, the smallest group of farms (under 3.000 m^3) had the highest Rate of Return on Capital I.

Geographic differences:

The farms in the regions south of Stadt, which had, on an average, the highest earning power per man-year in 1982, showed an increase in this power from 1982 to 1983. The farms north of and including Møre and Romsdal, which on an average had a lower earning power per man-year in 1982, further reduced this from 1982 to 1983. In other words, this means that the regional differences increased from 1982 to 1983. Some of this is linked to the fact that there are relatively more farms in the process of development or being established in the north than in the south. As mentioned earlier, the study shows that established farms on the whole have a higher earning power than farms under development.

The farms in region III (Hordaland, Sogn & Fjordane) had the highest average earning power per man-year both in 1982 and 1983 (Kr.261.336), and it increased from 1982 to 1983. Farms in Hordaland had the highest average earning power per man-year in 1983

(an average of Kr.265.695 for 22 farms), but the difference reflected by the figures in the case of the farms in Sogn & Fjordane was small (an average of Kr.253.345 for 12 farms). In addition, average Rate of Return on Capital I and II was particularly high for farms of all size groups in this region. Rate of Return on Capital I varied on an average from 27% to 46% for each of the three size groups. Corresponding figures for Rate of Return on Capital II was 25% to 32%.

The farms in region IV (Rogaland, Agder) had, on an average, the 2nd highest earning power per man-year in 1983 (Kr.198.153). 16 of the 17 farms included as part of the data were from Rogaland. The farms in region IV also had an increase in average earning power per man-year from 1982 to 1983.

The farms in region II (Møre and Romsdal, Trøndelag) had a smaller reduction in average earning power per man-year from 1982 to 1983 (Kr.174.957 and Kr.168.042 respectively). Average earning power per man-year for the 11 farms from Møre and Romsdal included as part of the data in the 1983 profitability study was Kr.163.153. Average earning power per man-year for the 28 farms in Trøndelag was about at the same level (Kr.169.962).

The farms in region I (North Norway) had, on an average, a poorer earning power per man-year in 1983 than in 1982 and had also the lowest earning power per man-year in 1983 of all 4 regions (Kr.164.992). There is, however, a large difference in the average earning power per man-year on the farms in Nordland and in Troms / Finnmark. The 5 farms included in the data in Troms/Finnmark had, on an average, an earning power per man-year of only Kr.1.677, while

the corresponding figures for the 21 farms in Nordland were Kr.203.878. Thus, only the farms in Hordaland and Sogn & Fjordane had a higher average earning power per man-year than the farms in Nordland. The low average earning power per man-year for farms in Troms/Finnmark can to some degree be considered to be the result of statistical chances (limited data) but in all likelihood is linked to the fact that there is a relatively large number of farms under development or expansion in the territory; something appears to have a negative effect on profits. A shortage of smolt and certain damages can also be contributory factors.

First Secretary SUNNEVE KALSTAD has carried out the profitability study. This summary is written by GUNNAR NYBØ, Department Head.

DEFINITIONS:

In this summary only a table showing results will be presented. There will, however, be some results given in the text beyond those given in the table. A more detailed version of the results of the operations for 1983 will be presented later in a separate publication. A closer account will be given in the publication of the principles behind the calculations and definitions of vessel groups and concepts used in this summary. Here only a brief explanation will be given of some main concepts.

Earning power expresses how much the undertaking, in reality, could pay for the man-power factor after other fixed and variable costs have been met, in accordance with what is normally considered reasonable from an economic/operational viewpoint. It is defined as the sum of income from production, minus the sum of costs inclusive of calculated depreciation, interest on borrowed capital, and estimated foregone

interest on the owner's invested capital, but excluding costs of wages and employer contributions to social insurance.

Man-Year: The same figures as are employed by the Budget Committee for Agriculture in its profitability studies, 1975 hours, are used.

Rate of Return on Capital I expresses the yield from the total capital invested in the enterprise, as per the following formula:

$$\frac{\text{Results before non-operating items + financing costs x 100\%}}{\text{Capital}}$$

Non-operating items: Income and expenses which do not have direct connection with production on the fish farm. Examples of such items can include loss or gain on the sale of property, gifts, compensations paid, and similar items.

Financing costs: Interest and debt.

Rate of Return on Capital II:
The same as Rate of Return on Capital I but includes the estimated value of the personal input into the enterprise by owners and their families without pay.

Degree of liquidity expresses how much short-term liquid resources a farm has in relation to the short-term debt. Here it may perhaps be claimed that stocks of living fish ought to be included, but we have taken the view that killing fish in a liquidity crisis is too short-sighted a solution. We have therefore disregarded living fish stocks in assessing liquidity.

TABLE: Operational result for Fish Farms, 1982 and 1983, country-wide.

Utilized breeding volume:	Average per farm	Final column: All Farms
1. Sale		
2. Change in stock		
3. TOTAL INCOME FROM PRODUCTION		
4. Feed costs		
5. Smolt, stock fish costs		
6. Other variable costs		
7. Fixed operating costs		
8. Interest on debt		
9. Depreciation	FOR FIGURES, SEE ATTACHED TABLE	
10. Interest foregone on own invested capital		
11. TOTAL COSTS		
12. TOTAL EARNING POWER		
13. Number of man-years		
14. Earning power per man-year		
15. Percentage of own capital invested		
16. Average investment per farm		
17. Farm investment per man-year		
18. Farm investment per kilo of fish produced		
19. Production per man-year		
20. Production per m^3		
21. Breeding volume		
22. Degree of utilization per concession		
23. Rate of Return on Capital I		
24. Rate of Return on Capital II		
25. Degree of liquidity		

26. Rate of Interest paid I

27 Rate of Interest paid II

28. Contribution margin
Production income less variable costs

29. Contribution ratio
Rate of production income less variable costs

30. Sales per farm

31. Proportion of salmon

32. Proportion of trout

33. Production per farm

34. Number of farms included in data

35. Total number of farms

* Number of farms which had production (409 in 1983) is somewhat higher than the number of farms which had both production and sale of fish (363 in 1983). Only the latter category is included in the data.

Tabell – Driftsresultat for oppdrettsanlegg 1982 og 1983. Landet totalt. Gjennomsnitt pr. anlegg

Benyttet oppdrettsvolum		Under 3.000 m³		3.000–4.999 m³		5.000–6.999 m³		7.000–14.999 m³		15.000 m³ og over		Alle anlegg	
		1982	1983	1982	1983	1982	1983	1982	1983	1982	1983	1982	1983
1. Salg	Kr	547.754	904.461	1.154.587	1.761.986	1.852.969	2.840.929	3.464.341	4.704.090	6.289.347	12.699.643	1.871.768	2.904.007
2. Endring i beholdning	"	103.271	32.952	269.781	207.121	477.662	442.444	693.334	286.401	781.912	379.485	377.522	256.360
3. SUM PRODUKSJONSINNTEKTER	"	651.025	937.413	1.424.348	1.969.107	2.330.631	3.283.272	4.157.675	4.990.491	7.071.259	13.079.128	2.249.290	3.160.367
4. Forkostnader	"	344.671	284.862	776.634	651.840	1.191.192	1.018.496	1.794.949	1.438.021	3.666.233	4.874.319	1.106.750	1.008.178
5. Smolt, settefisk kostnader	"		176.085		335.668		645.324		697.163		1.752.005		512.507
6. Andre variable kostnader	"		14.740		39.215		52.798		118.894		98.190		55.927
7. Faste driftskostnader	"	57.455	92.677	133.186	210.841	237.482	358.793	291.083	529.440	991.435	2.355.118	213.461	379.030
8. Gjeldsrenter	"	30.374	56.260	102.925	137.101	139.815	229.643	139.032	213.394	227.156	475.520	105.294	174.557
9. Avskrivninger	"	25.498	38.142	59.080	73.423	104.675	102.933	220.000	241.069	554.000	901.006	118.629	141.930
10. Kalkulatoriske renter på egenkapital	"	7.985	25.156	15.161	40.540	27.650	43.788	85.454	181.111	175.083	571.078	38.444	88.168
11. SUM KOSTNADER		465.983	687.922	1.086.986	1.488.538	1.700.814	2.451.775	2.530.518	3.419.092	5.613.907	11.027.236	1.582.578	2.360.297
12. LØNNSEVNE I ALT	"	185.042	249.491	337.362	480.569	629.817	831.598	1.627.157	1.571.399	1.457.352	2.051.892	666.712	800.070
13. Antall årsverk		1,17	1,64	2,10	2,45	3,20	3,58	5,20	5,06	11,20	12,24	3,19	3,50
14. Lønnsevne pr. årsverk	Kr	129.747	146.922	177.321	196.159	254.578	200.915	330.950	263.554	129.195	138.533	206.955	199.116
15. Egenkapitalprosent	%	43,6	45,1	38,1	34,7	46,7	23,7	59,4	54,4	72,9	71,1	47,28	39,2
16. Gj.snittlige anleggsinvest.	Kr	167.961	307.731	380.832	601.814	484.341	827.291	1.653.930	1.910.207	3.460.983	6.570.256	768.059	1.110.939
17. Anleggsinvest. pr. årsverk	"	125.662	211.567	178.135	264.860	215.662	206.276	311.205	360.984	286.879	482.418	203.593	269.081
18. Anleggsinvesteringer pr. kg fisk produsert	"	6,98	11,47	8,99	14,30	10,89	7,79	12,38	14,23	13,31	19,42	9,73	12,45
19. Produksjon pr. årsverk	Kg	24.192	24.106	25.681	25.373	32.130	27.408	26.779	27.882	20.516	26.066	26.448	26.152
20. Produksjon pr. m³	"	11,57	12,68	14,44	16,36	14,48	18,25	15,89	16,27	7,69	11,32	13,59	16,09
21. Oppdrettsvolum	m³	1.999	2.208	3.550	3.534	5.534	5.496	8.080	8.318	29.309	29.400	5.686	5.801
22. Utnyttingsgrad. Konsesjon	%	77,6	86,5	94,7	97,3	109,2	103,5	97,4	105,2	101,3	98,5	94,0	98,5
23. Totalrentabilitet I	%	18,0	33,7	19,1	25,7	19,4	18,7	27,9	25,9	6,5	4,8	19,8	24,5
24. Totalrentabilitet II	%	5,2	14,2	12,8	17,8	16,3	15,5	25,2	23,0	6,5	4,8	13,5	17,1
25. Likviditetsgrad	"	1,07	1,51	0,52	0,54	0,49	0,43	0,86	1,34	2,10	1,70	0,81	0,88
26. Rentedekningsgrad I	%	6,56	5,00	5,06	22,38	9,11	5,86	11,98	14,33	7,09	8,88	7,68	13,19
27. Rentedekningsgrad II	%	1,81	0,48	3,78	18,13	8,36	5,27	11,27	13,30	7,09	8,88	5,78	10,55
28. Dekningsbidrag	Kr	309.930	461.726	651.255	942.384	1.139.438	1.566.755	2.362.726	2.736.413	3.405.026	6.354.614	1.144.524	1.583.755
29. Dekningsgrad	%	30,2	40,3	44,8	45,6	45,4	42,7	54,5	49,4	48,2	38,7	43,17	44,4
30. Salg pr. anlegg	Kg		26.419		51.873		83.594		142.147		339.183		81.233
31. Hvorav laks	"		15.028		34.092		65.306		101.423		299.560		62.552
32. Hvorav aure	"		11.392		17.782		18.288		22.724		39.623		18.681
33. Produksjon pr. anlegg	"		28.038		58.767		100.213		137.205		352.048		90.991
34. Antall anlegg i utvalget		27	20	31	41	20	28	20	22	6	5	104	116
35. Antall anlegg i massen		155	134	95	132	73	71	51	61	8	11	382	409*

* Antallet anlegg som har produksjon (409 i 1983) er noe høyere enn antallet anlegg som hadde både produksjon og salg av fisk (363 i 1983). Bare anlegg av sistnevnte kategori inngår i utvalgene.